

ABSTRACT OF THE DISCLOSURE

A method of operating a gas turbine power plant comprising of a first gas turbine group (10), consisting of a compressor (12) and a turbine (13) which are connected mechanically with one another, and a second gas turbine group (20), including a combustion device (35), which is placed in the gas flow stream (42, 48) between the first group's (10) compressor (12) and turbine (13), whereby the second gas turbine group (20) consists of a compressor (22), a fuel injection device (51), a combustion chamber (35) and a turbine (23), whereby the second gas turbine group's (20) compressor (22) and turbine (23) are mechanically coupled to one another and at least one of the gas turbine groups (10, 20) having a device for the extraction of work (15, 25), whereby the fact that a first flow of water and/or steam is heated with heat from the flue gas from the first group's (10) turbine (13), that further amounts of water and/or steam are heated with heat from a gas stream that is compressed by the first group's (10) compressor (12), and the produced water and/or steam is injected into the gas stream (42, 48) in such amounts that at least 60% of the oxygen content of the air in the stream (42, 48) is consumed through combustion in the combustion device (35), and in that the combustion gas that is fed into the turbine (23) of the second gas turbine group (20) has a pressure in the range 50-300 bar.